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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/723,813	11/28/2000	Yasuharu Asano	450100-02862	6411
20999	7590	09/01/2004	EXAMINER	
FROMMER LAWRENCE & HAUG 745 FIFTH AVENUE- 10TH FL. NEW YORK, NY 10151			JACKSON, JAKIEDA R	
			ART UNIT	PAPER NUMBER
			2655	

DATE MAILED: 09/01/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 09/723,813	<b>Applicant(s)</b> ASANO ET AL.	
	<b>Examiner</b> Jakieda R Jackson	<b>Art Unit</b> 2655	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 12 July 2004.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1, 3-5, 7-11 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1, 3-5, 7-11 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 28 November 2000 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on July 12, 2004 has been entered.

### ***Terminal Disclaimer***

2. The terminal disclaimer filed June 6, 2004 has been approved and entered.

### ***Response to Amendment***

3. In response to the Office Action mailed April 13, 2004, applicant submitted an Amendment filed on June 9, 2004, in which the applicants amended claims 1, 10 and 11 and requests for reconsideration of the application.

***Response to Arguments***

4. In response to applicant's argument (Amendment, pages 6 and 7, filed February 17, 2004) about two meanings of "voice recognition" the examiner notes that "recognition of the individual speaker" (Amendment page 6) is not recited in the rejected claim(s), (i.e. only speech recognition, words to be recognized (claim 4), etc. are claimed). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

Applicant also argues (Amendment, page 7, filed June 9, 2004) that Edatsune, Dario and Henton fail to disclose extracting control pitch information or phonemics information from an input voice, or changing values corresponding to emotion and instinct states based on this information.

Applicant's arguments have been fully considered but they are not persuasive and moot in view of new grounds of rejection.

***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. **Claims 1, 3-5 and 7-11** are rejected under 35 U.S.C. 103(a) as being unpatentable over Edatsune (U.S. Patent No. 5,802,488, also EP 0730261, citation for the US Patent) in view of Dario et al. (Proceedings of IEEE, Instinctive Behaviors and Personalities in Societies of Cellular Robots 1991), hereinafter referenced as Dario, in further view of Henton (U.S. Patent No. 5,860,064)

Regarding **claim 1**, Edatsune discloses interactive speech recognition with varying responses for time of day and environmental conditions, hereinafter referenced as an "interactive speech recognition device". Edatsune's interactive speech recognition device is built in a stuffed toy dog (figure 1A; column 4, lines 25-28) comprising:

speech processing means for processing a speech input (speech recognition unit, figure 1A, element 5; column 1, lines 49-55); and

control means for controlling said speech processing means (drive control unit; figure 1B, element 7) based on a state of the robot (column 6, lines 37-51); wherein the state is determined by an action (col. 1, lines 8-10 and column 6,

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lines 52-54), but lacks wherein the state is determined by an emotion state and an instinct state of the robot, the processing includes extracting control pitch or phonemics information, and wherein said emotion and instinct states are determined on the basis of values corresponding to a plurality of states of an emotion model and an instinct model, respectively; wherein the value corresponding to each state within the emotion model and within the instinct model are linked in a mutually stimulating manner and changed based on said control pitch information or said phonemics information.

Dario discloses a robotic being (abstract) wherein the state is determined by an emotion (fearful, disgusted, annoyed etc. page 1929) and an instinct state of the robot instinctive reactions (page 1928), wherein said emotion and instinct states are determined on the basis of values corresponding to a plurality of states of an emotion model (fearful, disgusted, annoyed, etc.; page 1929) and an instinct model (Aerial; pages 1928-1929), respectively.

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Edatsune's invention such that the state is determined by an emotion state and an instinct state of the robot, to provide robustness to the robotic system by allowing each unit to modify the behavior of other units, thus simulating a fundamental aspect of social interaction between robots (page 1928), as taught by Dario, to emphasize the roles of "innate" personality, external stimuli, and communication.

Henton discloses the processing including extracting control pitch information (tables 1 and 2 with figure 2) and wherein the values corresponding

to each state within the emotion model (emotion) and within the instinct model (frustration, curious etc.) are linked in a mutually manner and changed based on said control pitch information (tables 2 and 1 with figure 2), to provide vocal emotion sound qualities to synthetic speech.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Edatsune's interactive speech recognition device such that it has the control pitch or phonemics information of the input speech and wherein the emotion state is based on that information, to make the speech produced more interesting and not deficient in vocal emotionality and to provide vocal emotion sound qualities to synthetic speech (column 1, lines 27-31).

Regarding **claim 3**, Edatsune discloses an interactive speech recognition device wherein speech processing means comprises speech synthesizing means for performing speech synthesizing processing and outputting synthesized sound (figure 1a, element 6; column 2, lines 7-10); and

wherein said control means control the speech synthesizing processing by said speech synthesizing means, based on the state of the robot (figure 1B, element 7; column 6, lines 37-51).

Regarding **claim 4**, Edatsune in view of Dario disclose an interactive speech recognition device control, but fail to disclose that the control means control phonemics information and pitch information output by said speech synthesizing means.

Henton discloses that the control means control phonemics information (column 1, line 67 – column 2, lines 1-7) and pitch information (column 2, lines 8-10) output by speech synthesizing means.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Edatsune's interactive speech recognition device such that it included a control means, to control phonemics and pitch information to appropriately express the state of emotions of the robot.

Regarding **claim 5**, Edatsune in view of Dario disclose an interactive speech recognition device, but lacks the control means controlling the speed and volume.

Henton discloses that the said control means (speech synthesizer) control the speech speed (table 1) or volume (table 1) of synthesized sound output by said speech synthesizing means.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Edatsune's interactive speech recognition device such that it has control means for controlling the speed and volume, so that the robot can express emotions to the user with both motions and synthesized sound to make the interaction more real.

Regarding **claim 7**, Edatsune discloses an interactive speech recognition device wherein said speech processing means comprises speech recognizing means for recognizing the speech input (column 1, lines 8-10); and



wherein said robot takes action corresponding to the reliability of the speech recognition results output from said speech recognizing means (column 1, lines 8-10), or the emotion of said robot is changed based on said reliability.

Regarding **claim 8**, Edatsune discloses an interactive speech recognition device wherein said control means recognizes the action which said robot is taking, and controls speech processing by said speech processing means based on the load regarding the action (column 1, lines 8-10).

Regarding **claim 9**, Edatsune discloses an interactive speech recognition device wherein said robot takes action corresponding to resources which can be appropriated to speech processing by said speech processing means (column 1, lines 8-10 with column 3, lines 58-62).

Regarding **claim 10**, the method is inherent in the device and is interpreted and rejected for the same reasons as set forth in **claim 1**.

Regarding **claim 11**, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use a recording medium to store data such as computer executable code for controlling actions, speech recognition etc because of the ease in updating the system.

### ***Conclusion***


7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jakieda R Jackson whose telephone number is 703.305.5593. The examiner can normally be reached on Monday through Friday from 7:30 a.m. to 5:00p.m.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Doris To can be reached on 703. 305.4827. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JRJ  
August 24, 2004



W. R. YOUNG  
PRIMARY EXAMINER